

## CLAIMS:

What is claimed is:

- 5           1.       A method, comprising:  
            receiving a persistence package;  
            deriving persistent data having a model structure from the persistence package; and  
            using metadata passed from the persistence package to establish at least one of a  
            storage format and a storage location for the persistent data during a runtime of the receiving  
10       system.
2.       The method of claim 1, further comprising storing the persistent data in at least  
            one of the storage format and the storage location during the runtime of the system.
- 15           3.       The method of claim 1, wherein the metadata comprises at least in part a  
            description of the model structure.
4.       The method of claim 1, wherein the metadata conforms to a metadata template  
            comprising rules for describing the model structure.  
20           5.       The method of claim 4, further comprising extracting the persistent data and the  
            metadata from the persistence package using a filter.
6.       The method of claim 1, further comprising selecting a transform, based on the  
25       metadata, to establish at least one of the storage format and the storage location.
7.       The method of claim 1, further comprising retrieving persistent data from storage  
            using a transform during the runtime of the system.

8. The method of claim 1, further comprising receiving persistent data compatible with at least one of any type of processor, any type of programming language, any type of operating system, and any type of architecture.

5 9. An apparatus, comprising:  
a data storage device;  
a persistence engine to receive a persistence package, wherein the persistence engine uses metadata passed from the persistence package to establish, during a runtime of the system, at least one of a storage format and a storage location to store the persistent data in the  
10 data storage device.

10. The apparatus of claim 9, wherein the data storage device is external to a running system using the persistence engine.

15 11. The apparatus of claim 9, further comprising a storing interface to store the persistent data using at least one of the storage format and the storage location.

12. The apparatus of claim 9, further comprising a retrieving interface to retrieve stored persistent data for use by one of the running system and an application.

20 13. The apparatus of claim 9, wherein the metadata comprises at least in part a description of the data model structure of the persistent data.

25 14. The apparatus of claim 13, further comprising a metadata template to format the metadata for readable reception by the persistence engine.

15. The apparatus of claim 9, wherein the persistence engine receives a persistence package comprising the metadata and the persistent data.

30 16. The apparatus of claim 9, wherein the persistence engine receives persistent data structured using any data model from a source comprising at least one of any type of

processor, any type of operating system, any type of programming language, and any type of architecture.

17. The apparatus of claim 9, further comprising a metadata engine having a metadata  
5 reader and a metadata filter.

18. The apparatus of claim 17, wherein the metadata filter interprets the metadata.

19. The apparatus of claim 9, further comprising a transform engine having a set of  
10 transforms, a transform selector, and a transform generator.

20. The apparatus of claim 19, wherein a transform establishes at least one of the  
storage format and the storage location to store the persistent data in the data storage device.

21. The apparatus of claim 19, the transform selector further comprising a data model  
15 comparator.

22. The apparatus of claim 19, wherein the transform selector selects a transform  
based on filtered metadata.

23. The apparatus of claim 19, wherein the transform selector requests a transform  
20 from the transform generator based on filtered metadata.

24. The apparatus of claim 23, wherein the transform generator produces a transform  
25 that remodels the persistent data to approximate as closely as possible a preexisting transform  
from the set of transforms.

25. The apparatus of claim 23, wherein the transform generator produces a transform  
that substantially maintains the model structure of the persistent data received by the running  
30 system.

26. The apparatus of claim 23, wherein the transform generator produces a transform to remodel the persistent data to maximize efficient retrieval for an application.

27. The apparatus of claim 23, wherein the transform generator uses iterative read-  
5 write trials to produce a transform to remodel the persistent data to maximize storage and/or retrieval speed.

28. The apparatus of claim 23, wherein the transform generator produces a transform to remodel the persistent data to maximize data compression.

10 29. An apparatus, comprising:  
a data model description receiver;  
a set of transforms;  
a data model comparator to produce a comparison between the data model  
15 description and a data model in a transform in the set of transforms; and  
an assembler to produce a transform based on the data model description and/or the comparison.

20 30. The apparatus of claim 29, further comprising a data model variance calculator.

31. The apparatus of claim 29, further comprising a data model approximator.

25 32. The apparatus of claim 29, further comprising an efficient storage/retrieval speed maximizer.

33. The apparatus of claim 32, the storage/retrieval speed maximizer further comprising a read/write iterator.

34. The apparatus of claim 29, further comprising a data compression maximizer.

30 35. The apparatus of claim 29, further comprising an indexing estimator.

36. A method, comprising:

receiving a data model description;

comparing the data model description to a preexisting data model; and

assembling a transform based on the data model description and/or the

comparison to establish a storage format and/or a storage location for persistent data during runtime of a system.

37. The method of claim 36, wherein the assembling a transform includes measuring a variance between the data model description and a preexisting data model.

38. The method of claim 36, wherein the assembling a transform includes approximating a preexisting data model.

39. The method of claim 36, wherein the assembling a transform includes maximizing data storage speed and/or data retrieval speed.

40. The method of claim 39, wherein the maximizing speed includes iteratively performing data read/write trials and selecting the fastest trial.

41. The method of claim 36, wherein the assembling a transform includes maximizing data compression.

42. The method of claim 36, wherein the assembling a transform includes optimizing efficient indexing for the persistent data.

43. An article of manufacture, comprising:  
a machine-readable medium comprising instructions, that when executed cause a machine to:  
receive persistent data having a model structure;  
receive metadata comprising at least in part a description of the model structure;  
and

establish, using the metadata during a runtime of the system, at least one of a storage format and a storage location for the persistent data.

44. The article of manufacture of claim 43, further comprising instructions, that when executed, cause a machine to store the persistent data using at least one of the storage format and the storage location.

45. The article of manufacture of claim 43, further comprising instructions, that when executed, cause a machine to receive metadata conforming to a metadata template comprising rules for describing a data model structure of the persistent data.

46. The article of manufacture of claim 45, further comprising instructions, that when executed, cause a machine to receive a persistence package comprising the persistent data and the metadata.

47. The article of manufacture of claim 43, further comprising instructions, that when executed, cause a machine to retrieve the persistent data from at least one of the storage format and the storage location.

48. The article of manufacture of claim 43, further comprising instructions, that when executed, cause a machine to select and/or create, based on the metadata, a transform to establish at least one of the storage format and the storage location.

49. The article of manufacture of claim 43, further comprising instructions, that when executed, cause a machine to receive persistent data compatible with one of any type of processor, any type of programming language, any type of operating system, and any type of architecture.